Title (en)

APPARATUS AND METHOD FOR CONFINEMENT AND DAMPING OF VIBRATION ENERGY

Title (de)

EINRICHTUNG UND VERAHREN ZUR BEGRENZUNG UND DÄMPFUNG VON SCHWINGUNGSENERGIE

Title (fr)

APPAREIL ET PROCEDE DE CONFINEMENT ET D'ATTENUATION D'UNE ENERGIE DE VIBRATION

Publication

EP 1092102 A1 20010418 (EN)

Application

EP 99950362 A 19990506

Priority

- US 9910057 W 19990506
- US 7484798 A 19980508

Abstract (en)

[origin: WO9958872A1] Undesirable vibrations are controlled in a mechanical structure by confining the vibrations to one or more specified areas of the structure and then dissipating the confined energy by damping. Vibration confinement is achieved using a confinement device (26, 44, 64, 92, 1020, 1420, 1508 and 1608) which effectively applies both translational and torsional forces to the structure (20, 30, 60, 90, 1400, 1500 and 1602). The strength of the translational and torsional forces, and the position of the confinement device are chosen to select a vibrational energy confinement region (between X2 and X3), (30a, 90a, 1510 and 1610). Damping elements (30, 42, 66, 96 and 1422) concentrated in the vibration confinement region to dissipate the confined vibrational energy. Judicious selection of the confinement region permits the structure to avoid the transfer of vibrational energy to particularly sensitive portions of the structure, or to direct vibrational energy to a portion of the structure. Optimization procedures are presented for designing structures having optimized placement and selection of the vibration confinement device and damping devices.

IPC 1-7

F16F 7/10; E04H 9/00; E04H 9/02; F16M 13/00; F16F 15/02

IPC 8 full level

B64C 1/40 (2006.01); **E04H 9/02** (2006.01); **F16F 7/10** (2006.01); **F16F 15/02** (2006.01)

CPC (source: EP US)

E04H 9/0235 (2020.05 - EP US); **F16F 7/10** (2013.01 - EP US); **F16F 15/02** (2013.01 - EP US)

Cited by

US9546946B2

Designated contracting state (EPC)

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)

WO 9958872 A1 19991118; AU 4307799 A 19991129; EP 1092102 A1 20010418; EP 1092102 A4 20041124; US 6116389 A 20000912; US 6394242 B1 20020528

DOCDB simple family (application)

US 9910057 W 19990506; AU 4307799 A 19990506; EP 99950362 A 19990506; US 65949800 A 20000911; US 7484798 A 19980508